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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,850	09/05/2003	John Yasaitis	2550/184	8594
2101	7590	03/14/2006	EXAMINER	
BROMBERG & SUNSTEIN LLP			LEE, PATRICK J	
125 SUMMER STREET			ART UNIT	PAPER NUMBER
BOSTON, MA 02110-1618				2878

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/656,850	YASAITIS, JOHN <i>phw</i>	
	<b>Examiner</b>	<b>Art Unit</b>	
	Patrick J. Lee	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 January 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-3,5-9,12-19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3,5-9,12-19 and 21 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 05 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Response to Amendment***

1. This action is in response to amendment filed January 30, 2006.

### ***Drawings***

2. The drawings are objected to because Figures 1-2 have handwritten labels. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Label "14" is not in the figures. Corrected drawing sheets in compliance

with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1, 8, & 16 are rejected under 35 U.S.C. 102(a) as being anticipated by US 6,580,109 B1 to Thomas et al.

With respect to claim 1, Thomas et al disclose a sensor comprising: photodiodes (18, 20) that are germanium based (see column 1, lines 25-28); and polysilicon gate (50), silicide contact layers (74), and silicon-based films (76, 78) as a polysilicon-based receiving electrode for receiving light to be converted by photodiode (18, 20). Polysilicon gate (50), silicide contact layers (74), and silicon-based films (76, 78) are arranged such that received light would substantially pass through them to photodiode (18, 20), with the photodiode converting the light into a received signal.

With respect to claim 8, Thomas et al disclose a sensor comprising: photodiodes (18, 20) that are germanium based (see column 1, lines 25-28); and polysilicon gate (50), silicide contact layers (74), and silicon-based films (76, 78) as a polysilicon-based receiving electrode for receiving light to be converted by photodiode (18, 20). Polysilicon gate (50), silicide contact layers (74), and silicon-based films (76, 78) are arranged such that received light would substantially pass through them to photodiode (18, 20), with the photodiode converting the light into a received signal.

With respect to claim 16, Thomas et al disclose a sensor comprising: photodiodes (18, 20) that are germanium based (see column 1, lines 25-28); and polysilicon gate (50), silicide contact layers (74), and silicon-based films (76, 78) as a polysilicon-based receiving electrode for receiving light to be converted by photodiode (18, 20). Polysilicon gate (50), silicide contact layers (74), and silicon-based films (76, 78) are arranged such that received light would substantially pass through them to photodiode (18, 20), with the photodiode converting the light into a received signal.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-3, 5-7, 9, 12-15, 17-19, & 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,580,109 B1 to Thomas et al.

Thomas et al disclose the device as described in claims 1, 8, & 16.

With respect to claims 2-3, Thomas et al does not explicitly disclose that the receiving electrode is doped. However, such would have been obvious to one of ordinary skill in the art in order to allow for appropriate transfer of charge through the electrode.

With respect to claim 5, the modified Thomas et al does not explicitly disclose the use of a bottom electrode, but such would have been obvious to one of ordinary skill in the art because it would allow for additional control over the photodiode.

With respect to claim 6, the use of a waveguide is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art because such would guarantee that as much light possible is directed to the detective unit.

With respect to claim 7, the modified Thomas et al disclose the use of a P-doped region (28, 30, 32) and an N-doped region (22, 24, 26), but do not explicitly disclose the use of an intrinsic region. However, such would have been obvious to one of ordinary skill in the art as a functional equivalent because the intrinsic region would allow for additional absorption of light.

With respect to claim 9, Thomas et al does not explicitly disclose that the receiving electrode is doped. However, such would have been obvious to one of ordinary skill in the art in order to allow for appropriate transfer of charge through the electrode.

With respect to claim 12, the modified Thomas et al does not explicitly disclose the use of a bottom electrode, but such would have been obvious to one of ordinary skill in the art because it would allow for additional control over the photodiode.

With respect to claim 13, the modified Thomas et al does not explicitly disclose the thickness of the receiving electrode as such, but such would have been obvious to one of ordinary skill in the art because that thickness would be appropriate in allowing light that is desired to be detected to pass through.

With respect to claim 14, the percentage of polysilicon is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art because such would allow for appropriate electrical conductive abilities with the ability to pass light through.

With respect to claim 15, the modified Thomas et al does not explicitly disclose the use of polysilicon germanium, but such would have been obvious to one of ordinary skill in the art because the polysilicon germanium would have allowed for proper coupling with the germanium based photodiode.

With respect to claim 17, the percentage of polysilicon is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art because such would allow for appropriate electrical conductive abilities with the ability to pass light through.

With respect to claim 18, Thomas et al does not explicitly disclose that the receiving electrode is doped. However, such would have been obvious to one of ordinary skill in the art in order to allow for appropriate transfer of charge through the electrode.

With respect to claim 19, the modified Thomas et al does not explicitly disclose the use of a bottom electrode, but such would have been obvious to one of ordinary skill in the art because it would allow for additional control over the photodiode.

With respect to claim 21, Thomas et al does not explicitly disclose that the receiving electrode is doped. However, such would have been obvious to one of ordinary skill in the art in order to allow for appropriate transfer of charge through the electrode.

***Response to Arguments***

8. Applicant's arguments with respect to claims 1-3, 5-9, 12-19, & 21 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit: 2878

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Patrick J. Lee  
Examiner  
Art Unit 2878

PJL  
March 6, 2006

  
Stephone B. Allen  
Primary Examiner